

REMARKS

Claims 69-72 and 74-86 are in the case and presented for consideration. Claims 69 and 83 have been amended. The support for this Amendment can be found in the Specification, for example, Page 16, Lines 26-36; Page 32, Line 15-Page 33, Line 34, and Page 35, Lines 13-23. No new matter has been added.

Claims 83-86 have been rejected under 35 U.S.C. § 112, second paragraph, for being indefinite. The Amendment made to Claim 83 as set forth above is believed to have overcome this rejection.

Claims 69-72, 74-81 and 83-86 have been rejected under 35 U.S.C. § 103 (a) as being unpatentable over U.S. Patent 4,821,731 (Martinelli et al.) in view of U.S. Patent 5,558,091 (Acker et al.). With respect to this rejection, the Examiner has stated:

Martinelli et al disclose a medical system including a catheter 20 having a distal portion 24 for applying laser energy for ablation, an ECG monitor, and position sensing means for sensing the position of the catheter distal end (see columns 7-10). One means used by Martinelli et al is magnetic means for determining the orientation of the catheter tip. Ultrasound means are used to determine tip position. Acker et al disclose the use of magnetic fields to determine both the position and orientation of a probe tip. It would have been obvious to one skilled in the art to have modified Martinelli et al such that magnetic fields are used to determine both position and orientation as disclosed by Acker et al. Such a modification merely involves the substitution of one known means for determining position for another and reduces the type of system parts by using the same means to perform two functions (both the function of determining position as well as orientation).

Claim 82 has been rejected under 35 U.S.C. § 103 (a) as being unpatentable over Martinelli et al. in view of Acker et al. as applied to Claim 70 above, and further in view of U.S. Patent 5,588,432 (Crowley). With respect to this rejection, the Examiner has states:

Crowley discloses a catheter for image and ablation in the heart that includes a means for steering the catheter to the desired location within the body. It is a well known in the art that positioning a catheter within the heart of a patient requires controlling the catheter by bending or rotating the tip of the catheter. Therefore, it would have been obvious to one skilled in the art to have further modified Martinelli et al such that it includes a means of steering the catheter within the body in order to ensure safe and accurate positioning of the catheter as is well known in the art and taught by Crowley.

Claim 69 has been amended in order to more particularly point out and distinctly claim the subject matter of the present invention which is directed toward a system for percutaneous

treatment of a patient's heart comprising a catheter having a proximal end and a distal end; an active portion at the distal end of the catheter for sensing electrical signals generated on the heart and for applying laser energy operable to ablate a portion of the heart; a position sensor responsive to magnetic fields for generating signals for determining position and orientation coordinates of the distal end; and a map showing the sensed electrical signals generated by the heart.

The Applicant notes that none of the cited prior art references, either alone or in combination with each other, disclose or suggest a system for percutaneous treatment of a patient's heart having the novel combination of features such as those outlined above. Accordingly, Claim 69 (Amended) is believed to be patentably distinct and non-obvious over these references. Claims 70-72 and 74-82 depend either directly or indirectly from Claim 69 (Amended) and are likewise believed to be both patentably distinct and non-obvious over these references.

Claim 83 has been amended in order to more particularly point out and distinctly claim the subject matter of the present invention which is directed toward a method of treating a patient's heart comprising the steps of: percutaneously inserting a catheter into a heart of a patient wherein the catheter has a proximal end and a distal end and an active portion at the distal end for sensing electrical signals generated on the heart and for applying laser energy as well as a position sensor responsive to magnetic fields for generating location signals; generating magnetic fields; using the position sensor to generate location signals based on the generated magnetic fields; sensing the position of the catheter distal end based on the location signals generated by the position sensor for determining position and orientation coordinates of the catheter distal end; using the position sensor to reference the catheter distal end based on the position and orientation coordinates; sensing electrical signals generated by the heart; mapping the electrical activity of the heart using the sensed electrical signals; positioning the catheter such that its distal end is adjacent tissue of the heart to be treated based on the position and orientation coordinates; and applying laser energy from the active portion of the patient's heart tissue.

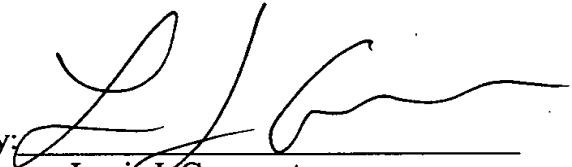
It is also important to note that none of the cited prior art references, either alone or in combination with each other, describe or suggest a method of treating a patient's heart having a combination of novel method steps such as those outlined above. Accordingly, Claim 83

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(Amended) is believed to be both patentably distinct and non-obvious over these references. Additionally, Claims 84-86 depend either directly or indirectly from Claim 83 (Amended) and are likewise believed to be both patentably distinct and non-obvious over these references.

Accordingly, by this Amendment, and for the reasons listed above, the present invention is neither anticipated by nor rendered obvious by the cited prior art references and favorable action is respectfully requested.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Specification:

After the title, please include the following paragraph as follows:

This Application is a Continuation Application of U.S. Patent Application Serial No. 08/793,371 filed May 14, 1997 which is a § 371 filing of PCT/US95/01103 filed January 24, 1995.

In the Claims:

Claim 69. (Twice Amended) A system for percutaneous treatment of a patient's heart, comprising:

a catheter, the catheter having a proximal end and a distal end;

an active portion at the distal end of the catheter for sensing electrical signals
generated ^{by} on the heart and for applying laser energy operable to ablate a portion of the heart;
[and]

a position sensor responsive to magnetic fields for generating signals for determining position and orientation coordinates of the catheter distal end; and

a map showing the sensed electrical signals generated by the heart.

Claim 83. (Twice Amended) A method of treating a patient's heart comprising the steps of:

(a) percutaneously inserting a catheter into a heart of a patient, the catheter having a proximal end and a distal end, an active portion at the distal end of the catheter for sensing electrical signals generated on the heart and for applying laser energy, and a position sensor responsive to magnetic fields for generating location signals;

(b) generating magnetic fields;

(c) using the position sensor to generate location signals based on the generated magnetic fields;

([b] d) sensing the position of the catheter distal end [using magnetic fields and] based on the location signals generated by the position sensor [by] for determining position and orientation coordinates of the catheter distal end;

- ([c] e) using the position sensor to reference the catheter distal end based on the position and orientation coordinates;
- (f) sensing electrical signals generated by the heart;
- (g) mapping the electrical activity of the heart using the sensed electrical signals;
- ([d] h) positioning the catheter such that its distal end is adjacent tissue of the heart to be treated based on the position and orientation coordinates; and
- ([e] i) applying laser energy from the active portion to the patient's heart tissue.